REMARKS

Claims 1 through 19 and new Claim 20 are pending in the application.

Claim 1 has been amended to reflect that the films of the invention advantageously include pigment and/or filler consisting essentially of titanium dioxide. Support for this amendment can be found in the Application-as-filed, for example on Page 5, lines 17 through 19 and Claim 8.

Claim 1 has been further amended to reflect that the films of the invention are advantageously coated with a crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks. Support for this amendment can be found in the Application-as-filed, for example on Page 5, lines 21 through 23; Page 11, lines 18 through 19 and Page 13, lines 7 through 10.

Claim 1 has also been amended to reflect that the coating does not contain additional antiblocking agents, yet the coated side of the films of the invention nevertheless advantageously exhibit a coefficient of friction of less than 0.45. Support for this amendment can be found in the Application-as-filed, for example on Page 22, line 26 through Page 23, line 2; Page 26, Table 2 and Page 18, Table 1.

Claim 2 has been amended to correct a typographical error.

Claims 8 has been cancelled, as its subject matter has been incorporated into Claim 1.

Claims 11 and 12 have been amended to conform to amended Claim 1.

Claim 16 has been cancelled, without prejudice or disclaimer to the filing of continuing applications thereon.

Claim 20 has been added to complete the record for examination and highlight advantageous embodiments of the invention. Claim 20 is more particularly directed to advantageous coatings that further include one or more surfactants. Support for Claim 20 can be found in the Application-as-filed, for example on Page 13, lines 7 through 9.

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

Rejection Under 35 USC § 112

Claim 16 stands rejected as indefinite, due to the recitation "increased" and "reduced." Solely to advance prosecution of the case and without addressing the merits of the rejection, Claim 16 has been canceled.

Applicants accordingly respectfully submit that the outstanding rejection of Claim 16 has been obviated.

The Claimed Invention is Patentable in Light of the Art of Record

Claims 1 through 19 stand rejected over European Patent Application 1 176 004 ("EP 004") in view of Ullmann's Encyclopedia of Industrial Chemistry ("Ullmann") and further in view of United States Patent No. 4,571,363 ("US 363") to Culbertson et al. or United States Patent No. 4,098,952 ("US 952") to Kelly et al.

It may be useful to consider the invention before addressing the merits of the rejection. White-colored, biaxially oriented polyester films are known for use in lidding applications, such as yoghurt cup lids. Polyester films having particular orientation values, commonly referred to as

R values, and orientation distribution values, commonly referred to as the as e_{max} ratio, are known to be especially advantageous for use as lidding films. Polyester films are particularly attractive for such lidding applications because they can provide a smooth, shiny surface that is considered esthetically pleasing by the consumer.

Although aesthetically beneficial, the pigments incorporated into polyester films to impart color can detrimentally influence other properties. The more pigments and the larger the pigments incorporated into polyester films, the greater the risk of tearing and delamination of the lidding as the yoghurt package is being opened, for example. Titanium dioxide is known to have a relatively small particle diameter. Lidding film incorporating titanium dioxide as the sole pigment has thus been found to be less prone to tearing and delamination. The use of titanium dioxide alone is further known to provide a particularly smooth and shiny film surface. As noted above, such smooth surfaces are typically considered aesthetically pleasing by consumers.

Unfortunately, the smooth surfaces of such titanium dioxide filled films have a tendency to adhere to each other during film manufacturing, a phenomenon commonly referred to as "blocking." Titanium dioxide filled lidding films thus suffer from inferior winding performance. (The Examiner's attention is kindly directed to the Application-as-filed on Page 5, lines 13 – 19).

Various strategies to address blocking are known in the art. It is known to incorporate larger particles into polyester films to avoid blocking, for example. Such large particles minimize surface contact between film surfaces and provide channels for air flow between film layers during winding. However, such larger particles introduce detrimental properties into the resulting lidding films, as noted above.

Specific coatings, commonly referred to as slip coatings, are also known to lower the coefficient of friction of film surfaces, and thus improve blocking. In addition to improved blocking, slip coatings also increase the release properties of the resulting films. Slip coatings

incorporating silicone resin are particularly well known. The Examiner's attention is kindly directed to United States Patent No. 5,302,459 ("US 459") noting that "silicone resin is well known in the art" to impart excellent slip and release properties to polyester film. (US 459, Col. 1, lines 60 - 63). Unfortunately, such slip coatings can interfere with the resulting films ability to adhere to subsequently applied printing inks and lacquers. Poor bonding to printing inks and the like would be especially disadvantageous in consumer packaging films, such as lidding films.

A number of adhesion promoting coatings are known to improve bonding between polyester films and subsequent printing inks, lacquers and the like. Acrylic-based coatings have long been known to promote adhesion of polyester films to solvent based lacquers, for example. Such acrylic-based coatings are disclosed in EP 0 605 130 ("EP 130"), as noted in the Application-as-filed on Page 3, lines 8 through 10.

Heretofore, conventional release agents, such as silicone, have been formed from altogether different chemical families than adhesion-promoting coatings. Traditional wisdom clearly indicates that widely differing chemical families would be required to promote bonding versus improving slip, as greater release represents the antithesis of bonding. The Examiner's attention is again kindly directed to US 459, evidencing the state of conventional wisdom in its statement "silicone resin intrinsically has an excellent release property so that is has deficient adhesion." (US 459, Col. 1, line 66 – Col. 2, line 1).

In sharp contrast to such conventional wisdom, Applicants have found that particular acrylic-based copolymer coatings impart advantageous slip properties to polyester films filled with titanium dioxide alone. More particularly, Applicants have surprisingly discovered that crosslinked coatings comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks impart a coefficient of friction of less than 0.45 to the resulting film surface. Such a result is altogether unexpected in light of conventional wisdom, to say the least.

Accordingly, the claims are directed to white, biaxially oriented polyester film having a base layer B that includes pigment and/or filler consisting essentially of titanium dioxide, in which the R value of the resulting film is smaller than 43 daN/mm^2 and the e_{max} ratio of the film is smaller than 2.5. At least one of the two surfaces of the film has been provided with a crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks. Altogether unexpectedly, the claimed films exhibit a coefficient of friction of less than 0.45.

The primary reference does not teach or suggest the claimed invention.

As correctly noted by the Examiner, EP 004 is directed to films suitable for use as lidding. In contrast to the claimed invention, EP 004 notes a broad range of particulate fillers as suitable for use within its films, including comparatively large fillers such as calcium carbonate. (Claim 8). EP 004 discloses a mixture of fillers within its initial working example. (Paragraphs 0065 – 0067). EP 004 further discloses that its films may be coated in order to improve their performance in later processes. EP 004 broadly notes that its films may be coated to improve adhesion to subsequent coatings or to provide improved antistatic properties, for example. (Paragraph 0044) In contrast to the opinion urged within the Office Action, EP 004 evidences the state of conventional wisdom by generically noting that acrylic coatings may be used to improve the adhesion of the resulting film to printing inks. EP 004 then goes on to expressly recommend the coatings of EP-A-0 605 130 to improve adhesion of its films to printing inks. (Paragraph 0045).

EP 004 thus does not teach or suggest the claimed invention. EP 004 more particularly does not teach or suggest white, biaxially oriented polyester film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a coefficient of friction of less than 0.45.

Ullmann does not cure the deficiencies in EP 004.

Ullmann is merely an encyclopaedic reference. The Examiner is correct in that Ullmann generically notes that acrylic coatings may be used to improve the adhesion of polyester films to coating materials. Ullmann also evidences the state of conventional wisdom by going on to disclose that other coatings may be used to provide slip. (Paragraph 2.42). Ullmann also notes that films with smooth surfaces are known to possess a high coefficient of friction and therefore tend to block. Ullmann recommends additives such as calcium carbonate to address blocking. (Paragraph 3)

Ullmann thus does not teach or suggest the recited white, biaxially oriented polyester film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a coefficient of friction of less than 0.45.

The tertiary references, both directed to particular acrylic coatings, similarly do not cure the deficiencies in EP 004.

US 363 is directed to acrylic coatings that promote adhesion between polyester film surfaces and subsequently applied reprographic or matte coatings. (Col. 1, lines 5 – 10). The films of US 363 are expressly noted to provide "excellent adhesive qualities." (Col. 6, lines 53 – 56). The films of US 363 appear to be transparent, unfilled films. US 363 expressly notes that "slip agents," i.e. an additional chemical constituent, may be incorporated into the acrylic coating. (Col. 5, lines 40 – 43). US 363 is otherwise silent as to the frictional and winding properties of its films.

US 952 is similarly directed to acrylic coatings that promote adhesion between polyester films and functional coatings, particularly cellulose acetate coatings. (Col. 1, lines 13 through 17). The priming layers of US 952 generally include glycidyl methacrylate or glycidyl acrylate and acrylonitrile. (Col. 1, lines 35 through 42). The films of US 952 similarly appear to be transparent, unfilled films. US 952 also expressly notes that additional anti-blocking additives, i.e. an additional chemical constituent, may be incorporated into its coatings. (Col. 3, lines 53 – 55). US 952 is likewise otherwise silent as to the frictional and winding properties of its films.

US 363 and US 952 thus do not teach or suggest the recited white, biaxially oriented polyester film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a coefficient of friction of less than 0.45 in the absence of additional slip or anti-blocking agents. In fact, US 363 and US 952 teach away from the recited films by expressly indicating that an additional slip agent or anti-blocking additive would be required to address slip issues.

There would have been no motivation to have combined EP 004, Ullmann and US 363 or US 952. Applicants respectfully submit that merely because the references can be combined is not enough, there must still be a suggestion. MPEP 2143.01 (section citing Mills). Applicants respectfully submit that the Office Action is indulging in impermissible hindsight by merely picking and choosing elements from the prior art while using the instant specification as the guide for that selection process. The claimed films provide improved slip properties to comparatively smooth surfaced films. Ullmann is merely an encyclopaedic reference. US 363 and US 952 seek to provide improved adhesion to subsequently applied coatings. Thus the claimed invention and the cited references address altogether different problems, to say the least. In fact, conventional wisdom would consider these problems to be contradictory, as described above.

However, even if Applicants had looked to one or more of these references (which they did not), the claimed invention would not result. The primary reference, EP 004, considered in its entirety, expressly recommends the coatings of EP 130 to provide adhesion to coating inks. EP 130 broadly discloses coating its films with an adherent layer formed from acrylic resin to improve adhesion of the resulting films to inks and lacquers. (EP 130, Page 6, lines 14 – 15). In contrast to the claimed invention, EP 130 teaches the use of an external crosslinking agent, i.e. a separate chemical constituent such as an epoxy resin, to crosslink the adherent layer. (EP 130, Page 7, lines 8 – 11 and Example 3, lines 4 – 15). EP 130 is silent as to the frictional and winding properties of its films.

Consequently, even if Applicants had looked to EP 004 (which they did not), the recited white, biaxially oriented polyester film that includes pigment and/or filler consisting essentially of titanium dioxide in which the film has been provided with a crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a coefficient of friction of less than 0.45 would not have resulted.

Furthermore, even if one had looked to EP 004, ignored its specific recommendation as to coatings, and looked instead to Ullmann, US 363 and US 652 (which, again, was not done), the claimed invention still would not result. EP 004 is merely directed to lidding films. Ullmann generically provides a laundry list of coating families that provide various functionalities. US 363 and US 652 are both directed to particular adhesion promoting coatings that may further contain additional slip agent or anti-blocking agents.

Consequently, even if the art of record were combined (which should not be done), the recited white, biaxially oriented polyester film that includes pigment and/or filler consisting essentially of titanium dioxide, in which the film has been provided with a crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks, wherein the coated side(s) of the film exhibits a

coefficient of friction of less than 0.45 in the absence of additional slip or anti-blocking agents would not result.

None of the cited references addresses the issue solved by the instant application, i.e. the provision of comparatively smooth surfaced lidding films having improved windability. Accordingly, they can not suggest a solution to that problem. The instant invention resides in the selection of particular elements from a wide number of possibilities to solve a specific problem, i.e. the recited combination of titanium dioxide filled film provided with a crosslinked coating comprising resin consisting essentially of an acrylate copolymer containing copolymerized comonomer forming intermolecular crosslinks to provide films exhibiting the recited coefficient of friction of less than 0.45.

Accordingly, Applicants respectfully submit that Claims 1 through 19 are patentable in light of EP 004, Ullmann, US 363 and US 952, considered either alone or in combination.

Statement in Conformance with 37 CRF 3.73(b)

As noted above, a Power of Attorney, appointing Cathy R. Moore as a Practitioner of Record for Mitsubishi Polyester Film, GmbH, is attached. The above-referenced application has been assigned in its entirety to Mitsubishi Polyester Film, GmbH at Reel/Frame 014606/0968. Copies of the assignment will be forwarded upon request. Accordingly, Cathy R. Moore is authorized to act on behalf of Mitsubishi Polyester Film, GmbH in the above-referenced application.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1 through 20 are now in condition for immediate allowance. It is requested

that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,

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I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office at facsimile number (703) 872-9306 on November 22, 2004.

Claire Wygand

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